


## SECOND TERM WEEKLY LESSON NOTES

## WEEK 11

<b>Date:</b> 22 <sup>nd</sup> JULY, 2022	<b>DAY:</b>	<b>Subject:</b> Science
<b>Duration:</b>		<b>Strand:</b> Forces & Energy
<b>Class:</b> B7	<b>Class Size:</b>	<b>Sub Strand:</b> Electricity & Electronics
<b>Content Standard:</b> B7.4.2.2 Demonstrate knowledge of how to assemble and explain the functions of basic electronic components and their interdependence in an electronic circuit		<b>Indicator:</b> B7.4.2.2.1 Demonstrate how to assemble basic electronic components in an electronic circuit..
<b>Performance Indicator:</b> Learners can demonstrate how to assemble basic electronic components in an electronic circuit.		<b>Lesson:</b> 1 of 2
<b>Core Competencies:</b> DL 5.3: CI 6.8:		
<b>References:</b> Science Curriculum Pg. 31-32		
<b>Phase/Duration</b>	<b>Learners Activities</b>	<b>Resources</b>
<b>PHASE 1: STARTER</b>	Using questions and answers, review learners understanding in the previous lesson.  Share learning indicators and introduce the lesson.	
<b>PHASE 2: NEW LEARNING</b>	Brainstorm learners for meaning of Electronic circuit. <i>An electronic circuit is the path through which electrical current flows.</i>  Guide learners to identify components that make up electronic circuits. Example: capacitor, Diode, LED, Resistor, IC, Relay, Inductor, etc.  Paste a chart of electronic components for learners to identify the names of the pictures and relate to them.    Guide learners to discuss the three main basic component of an electrical circuit. <ul style="list-style-type: none"> <li>• Voltage source – The voltage source, such as a battery, is needed in order to cause the current to flow through the circuit.</li> </ul>	battery, transistor, capacitor, inductors, light emitting diode (LED) and diodes

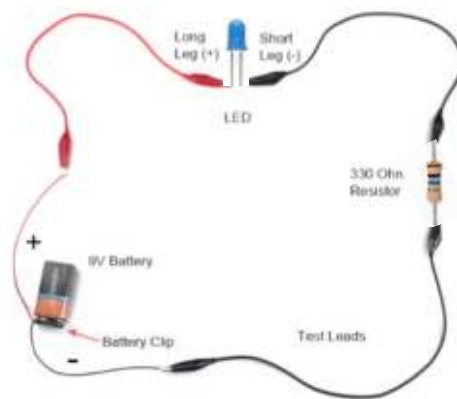
- Conductive path – a conductive path that provides a route for the electricity to flow.
- Load - a proper circuit needs a load that consumes the power.

Engage learners to demonstrate how to assemble components to test LED.

**Components Needed:** 9V Battery, Battery Snap-on Connector, Test Leads w/ Alligator Clips, 330 Ohm Resistor, LED – Basic Red 5mm

**Steps:**

1. Attach the battery clip to the top of the 9V battery.
2. Red wire from the battery clip is connected to one alligator clip on the red test lead.
3. The other end of the red test lead is connected to the long leg (+) of the LED.
4. Connect one alligator clip from black test lead to the short leg (-) of the LED.
5. The other end of the black test lead is clipped to one leg of the 330 Ω resistor.
6. Clip one side of the other black test lead to the other leg of the 330 Ω resistor.
7. The opposite end of the black test lead is connected to the black battery wire.



Assessment

Engage learners in different demonstrations to assembly electronic circuits components to produce light.

**PHASE 3:  
REFLECTION**

Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.

Take feedback from learners and summarize the lesson.

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<b>Class:</b> B7	<b>Class Size:</b>	<b>Sub Strand:</b> Electricity & Electronics	
<b>Content Standard:</b> B7.4.2.2 Demonstrate knowledge of how to assemble and explain the functions of basic electronic components and their interdependence in an electronic circuit		<b>Indicator:</b> B7.4.2.2.2 Discuss the function of each electronic component and their interdependence with each other.	<b>Lesson:</b> 2 of 2
<b>Performance Indicator:</b> Learners can describe the function of each electronic component.		<b>Core Competencies:</b> DL 5.3: CI 6.8: CI 6.6:	
<b>References:</b> Science Curriculum Pg. 31-32			
<b>Phase/Duration</b>	<b>Learners Activities</b>	<b>Resources</b>	
<b>PHASE 1: STARTER</b>	Using questions and answers, review learners understanding in the previous lesson.  Share learning indicators and introduce the lesson.		
<b>PHASE 2: NEW LEARNING</b>	Guide learners to discuss the function of each electronic component and their interdependence with each other Example: <i>Switch: Switches can come in many forms such as pushbutton, rocker, momentary and others. The switch it is used to either open or close a circuit. A close circuit provides a complete path for the flow of electric current. When a circuit is opened, a break is created so that current does not flow through the circuit.</i>  <i>Resistor: Resistors are used to regulate the flow of current of circuit. The amount of resistance that a resistor offers is measured in Ohms. Most resistors have coloured stripes on the outside and this code will tell you it's value of resistance</i>  <i>Variable Resistor (Potentiometer): A variable resistor is also known as a potentiometer. These components can be found in devices such as a light dimmer or volume control for a radio. When you turn the shaft of a potentiometer the resistance changes in the circuit.</i>  <i>Light-Dependent Resistor (LDR): A light-dependent resistor is also a variable resistor but is controlled by the light versus turning a knob. The resistance in the circuit changes with the intensity of the light. These are often found in exterior lights that automatically turn on at dusk and off at dawn.</i>  <i>Capacitor: Capacitors store electricity and then discharges it back into the circuit when there is a drop in voltage. A capacitor is like a rechargeable battery and can be charged and then discharged. The value is measured in F (Farad), nano Farad (nF) or pico Farad (pF) range.</i>	battery, transistor, capacitor, inductors, light emitting diode (LED) and diodes	

	<p><b>Diode:</b> A diode allows electricity to flow in one direction and blocks it from flowing the opposite way. The diode's primary role is to route electricity from taking an unwanted path within the circuit.</p> <p><b>Light-Emitting Diode (LED):</b> A light-emitting diode is like a standard diode in the fact that electrical current only flows in one direction. The main difference is an LED will emit light when electricity flows through it. Inside an LED there is an anode and cathode. Current always flows from the anode (+) to the cathode (-) and never in the opposite direction. The longer leg of the LED is the positive (anode) side.</p> <p><b>Transistor:</b> Transistor are tiny switches that turn a current on or off when triggered by an electric signal. In addition to being a switch, it can also be used to amplify electronic signals. A transistor is similar to a relay except with no moving parts.</p> <p>Guide learners to dismantle and assemble spoilt electronic gadgets such as radio, TV, mobile phones, electronic watches and others that can be found in the home and at school and name the parts.</p> <p>Have learners identify the Positive (P) region and Negative (N) region of the P-N junction diode and construct a simple electronic circuit comprising a 3V battery made of two dry cells in series with a switch and an LED.</p> <p>Learners to explain what happens when the switch in an electronic circuit is closed and when it is opened.</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> <li>1. Identify five electric circuit component and state their functions.</li> <li>2. construct a simple electronic circuit comprising a 3V battery made of two dry cells in series with a switch and an LED</li> </ol>	
<p><b>PHASE 3: REFLECTION</b></p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	